

MORTALITY AMONG MINERS FROM TWO IMPORTANT MINING REGIONS IN BRAZIL, 1979-2005

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Background and Aims – Miners are exposed to risk factors related to their working environment such as coal dust, noxious gases, lack of oxygen, high temperature, metals, and radioactivity. Mining contributes for around 5% of the Brazilian Gross Domestic Product (GDP) and more than 70% of all mines are located in the South and Southeast regions of the country. The aim of this study was to evaluate the mortality by Respiratory Disease (RD) of Brazilian miners from 1979 to 2005, comparing it with that experienced by the general population.

Methods – The data of respiratory disease deaths occurred among Brazilian miners, 20 years or older, resident in the south or southeast regions, were obtained from the Brazilian Mortality Information System (SIM) according to ICD-9 (1979-1995) and ICD-10 (1996-2005). Then, the Mortality Odds Ratio (MOR), stratified by age (20-39; 40-59; <60; 60+ yrs old) and periods of death (1979-1987; 1988-1996; 1997-2005) was calculated.

Results – In both regions, it was observed an increased risk of death by RD among miners for the entire studied period and for all ages, and it was higher among miners of the southeast region ($MOR_{SOUTH} 1.45$ 95%CI=1.33-1.59; $MOR_{SOUTHEAST} 1.25$ 95%CI=1.08-1.45). The youngest strata (40-59 years) had the highest risk of dying by RD ($MOR_{SOUTH} 1.90$ 95%CI=1.19-1.45; $MOR_{SOUTHEAST} 1.47$ 95%CI=1.13-1.91), compared to the oldest strata (60 years or more) in both regions and in all studied periods ($MOR_{SOUTH} 1.31$ 95%CI=1.55-2.32; $MOR_{SOUTHEAST} 1.41$ 95%CI=1.18-1.69). When stratified by selected causes of death, miners showed a statistical significant elevated risk of dying by lung disease due to external agents in both regions ($MOR_{SOUTH} 14.74$ 95%CI=12.06-17.99; $MOR_{SOUTHEAST} 26.92$ 95%CI=19.62-36.07), and this elevated risk was maintained when the population was stratified by period and age.

Conclusions – When compared to general population, Brazilian miners were at higher risk to die by RD, specifically by lung disease due to external agents.